

FOOTPRINTS: Measuring the ecological Impact of our lives

What is an Ecological Foot print?

When we think of trackers reading a trail of prints, the track, or “footprint” is evidence of what animals have passed, what they were doing and when. An **ecological foot print** is a measure of the evidence that we humans leave behind when we use energy.

An ecological footprint measures the evidence of our energy use. The evidence is also called an “impact”. Every time we use energy there is an impact. We use energy to get food, to keep our homes warm and bright, and to move our cars and stuff around.

When measuring our *ecological* footprint then, we measure not the size of our feet, but the size all of the land we use to get our energy from food, fossil fuels and renewable resources.

What land we measure depends on what energy source we use. Food is our foremost energy source. Food gives us the energy to live our lives. When we measure the impact of growing our food, we measure the land that it takes to grow our food or graze our animals, as well as the land needed to clean the air polluted by tractors and harvesting equipment.

How do I measure my Ecological Footprint?

Since food is an energy source that everybody uses, we’ll begin measuring the size of our ecological footprint by looking at the energy and land it takes to grow our food. The first thing we’re going to need to do is keep track of the foods we eat for a whole day.

The second thing we’ll do is cut out food points. To do this, cut out 5 one inch squares (see below) from 4 different colors of paper (20 total). As a group, designate which color will be for field, for farm, for forest and for ocean points.

Next, use the table on the right to figure out how many farm, forest, ocean and field points your diet requires by adding together points from each food you ate that day.

Now, on a sheet of paper draw and cut out a footprint that will hold 15 points. Arrange and glue your points inside the footprint. If your points won’t all fit, cut out another footprint the same size for your additional points. Compare your footprint with your classmates. Whose is the fullest? Whose is the least full? What do you notice about the food choices of each? The footprint you made represents the amount of usable land evenly divided for each person on the planet (1.5 hectares or just under 4 acres).

1 point is the size of a square with one inch sides, (or once square inch).

What percentage of your share of land (15 points) did you use just getting your food?

Remember that this footprint doesn’t include the impacts from using cars or electricity or heating your home, it only measures our food choices.

What are Field Forest and Farm Points?

Farm points represent the amount of land it takes to grow all the vegetables and grains that your diet requires.

Field points represent the amount of land required to graze all the animals that your diet requires.

Forest points represent the amount of land required to clean the CO₂ that burning fossil fuels generates. The fossil fuels in this point system represent those burned in tractors and harvesters. Transportation, packaging and refrigeration of food is not included here.

Ocean points represents the amount of ocean required to catch all the fish that your diet requires.

Food Points	Forest	Farm	Field	Ocean
Fruits and Vegetables	1/10	1/10	0	0
Bread	1/5	1/5	0	0
Rice, Cereals, Noodles...	2/5	2/5	0	0
Beans	1/10	9/10	0	0
Milk and Yogurt	1/5	0	3 1/10	0
Ice Cream, Sour Cream	7/10	1/10	15 2/5	0
Butter	1/10	1/10	0	0
Cheese	3/10	1/10	7 2/5	0
Eggs	3/10	1	0	0
Pork	9/10	2/5	0	0
Chicken or Turkey	4/5	3/5	0	0
Beef (grain fed)	1 1/5	2 3/5	14 7/10	0
Beef (pasture fed)	1 1/5	0	21 1/10	0
Fish	1 2/5	0	0	30 4/5
Juice	2/5	3/10	0	0
Soda	1	2/5	0	0
Eating Out	1 7/10	2 2/5	0	0

EXTENSIONS

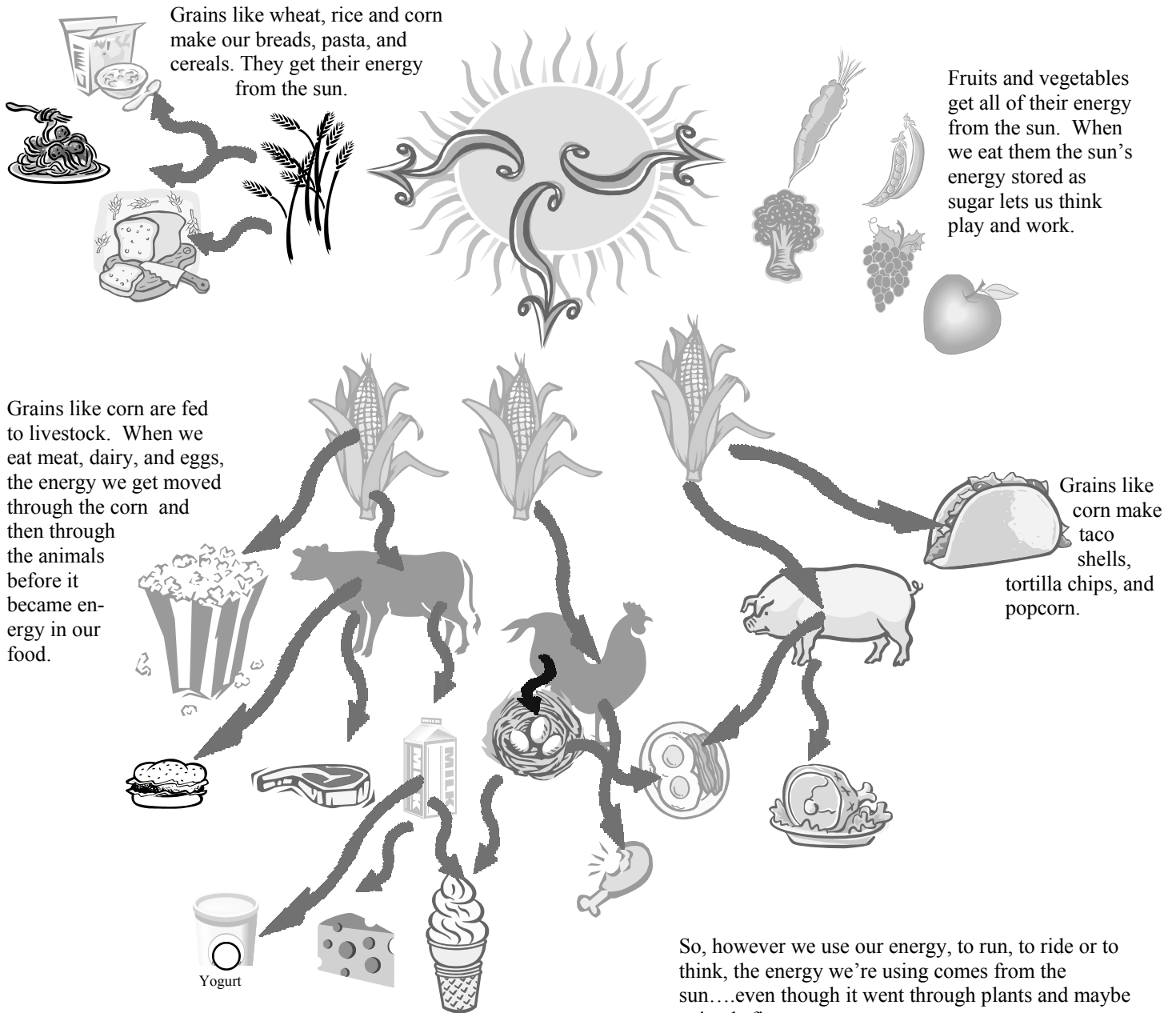
Keep a food journal for a week or month. Total all points and find an average by dividing their sum by 7 (for a week) or 28 (for four weeks). See if the average footprint is higher or lower than your daily footprint.

Make a few changes in your diet, repeat this exercise and see how that change impacts the size of your footprint.

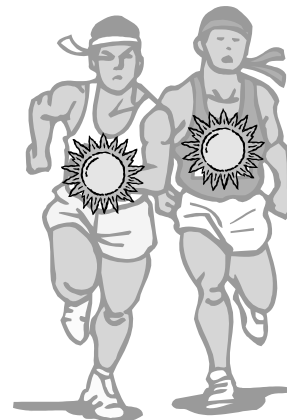
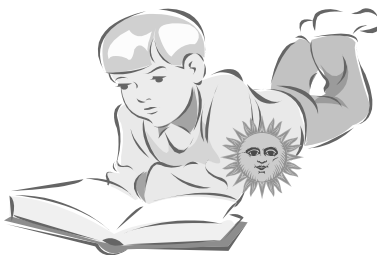
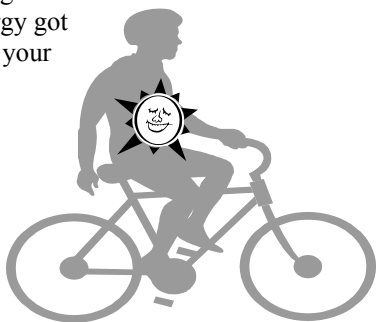
Make a footprint with four points and a footprint with 50 points. Four is the size of the ecological foot print of people who live in India, for all their needs: food, clothing, transportation, electricity. 50 is the size of US Americans total ecological footprint. Discuss the reasons we use so much more land to meet our needs.

When you’re done, save your footprints, you can use them for the activity in the next Green Schools News! Next we’ll be measuring our transportation footprints.

How the sun's energy gives us energy



What was your biggest meal yesterday? Draw a picture of the foods in that meal. From each food draw a diagram of how the energy got from the sun to your belly.



Kids! Trace your food's energy to the sun.
FOURTH GRADE AND UP See other side for more activities